Compassionate Technology in Mental Healthcare:

A Qualitative Analysis of the Perceptions and Attitudes of Prospective Therapists Regarding the Use of Technology in 'Blended Care'

July 21st, 2022

Bachelor Thesis Psychology

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Abstract

The demand for mental healthcare services and treatments is rising and technology is called forth to

fill the gap between what society demands and what the mental healthcare field can currently provide.

The use of technology in mental healthcare has the potential to allow for more people to have access

to treatment and lower the waiting periods for receiving help. However, despite the demand for more

services, research shows that therapists are reluctant to implement technology into their practice and

perceive there to be too many barriers to the adoption of technology and Blended Care, which is the

combination of online and face-to-face therapy combined with other internet or digital-based

interventions. For this reason, there is a need to address the perceptions of current psychology

students aiming to work in the field regarding the use of technology in Blended Care, as their attitudes

and needs are what will drive the future development of the field. The use of technology is further

framed by the concept of compassion, as compassion is considered to be a necessary key element for

the successful client-therapist relationship, and is also linked to alleviating suffering. This paper

describes a qualitative research conducted on the current perceptions and attitudes of current

psychology students on the implementation of technology into the mental healthcare field and the

levels of perceived compassion in Blended Care. Through the use of two in depth focus group

interviews with current psychology students (N = 4), this paper reports on the visions of the future on

how technology could be incorporated into practice and how it could support compassion between a

therapist and client. The interviews were then transcribed and coded and three main codes were

identified: Technology in Mental Healthcare, Compassion in Technology, and Future Expectations.

Overall, participants had a lot of agreement amongst each other and provided interesting insights into

possibilities to make Blended Care more accessible and appealing for both the therapist and the

patient which are presented in this paper.

Keywords: mental healthcare, compassion, technology in mental healthcare, future

expectations, qualitative study

A Qualitative Analysis of the Perceptions and Attitudes of Prospective Therapists

Regarding the Use of Technology in 'Blended Care'

The mental health field has transformed over the years—from the closure of the old asylums and moving care into the community, to the shift in society's attitude to a more positive and accepting one, leading to mental health no longer being a taboo topic shrouded in ignorance, stigma, and fear (Venters, 2018). People becoming more accepting of mental health problems has also brought about awareness on the topic, and in current times it can be observed that more and more people are willing to openly discuss mental health issues, as well as actively seek out help (Mechanic, 2007; Venters, 2018). In the Netherlands over one million people per year seek help and support regarding their mental health, leading to an increase in costs and demand, with waiting lists getting longer (Lusi et al., 2020). With the wider acceptance and demand of mental healthcare, as well as the advancement of technology, there has been a subsequent increase in the development of internet-based and technology-mediated treatment options in mental and behavioral healthcare services (Materia et al., 2020). These technology-based treatment options can be very effective and make mental healthcare services even more accessible. However, despite the benefits of these treatment options, there are still very low adoption rates of eMental Health Services (Feijt et. al., 2018; Titzler et. al., 2018). Furthermore, there is no research specifically pertaining to the attitudes and willingness to adopt technology in Blended Care amongst psychology students aiming to work in the field, therefore there is little information on the perceived needs and expectations of upcoming professionals.

What is eMental Health: benefits and disadvantages

In their 2018 article, Feijt et al. defined eMental Health as "any delivery of mental and behavioral health services, including but not limited to therapy, consultation, and psycho-education, by a licensed practitioner to a client in a non-face-to-face setting through distance communication technologies such as the telephone, asynchronous email, synchronous chat, and video conferencing" (p. 2). while Riper et. al. (2010) utilize a more concise definition, namely "the use of information and communication technology (ICT)—in particular the many technologies related to the Internet—when

these technologies are used to support and improve mental health conditions and mental health care"
(p. 1). For the purpose of this study, the term eMental Health encompasses the use of technology by
either patient or therapist in and/or out of session, with the intention of furthering and improving the
treatment process.

The use of eMental Health has unique benefits such as increased and easier access to
psychological treatment, convenience, as well as enhanced self-reflection and self-disclosure of the
client (Feijt et. al., 2018). However, despite its advantages, there are still very low adoption rates for
the use of eMental Health, reporting that about 80%-90% of practitioners in the Netherlands and
Germany never or rarely use digital or internet-based tools during treatment (van der Vaart, Atema, &
Evers, 2016; Hennemann, Beutel & Zwerenz, 2017; Glueckauf et. al., 2018; Feijit et. al., 2018).

Feijit et. al. (2018) looked into some of the most prominent barriers to the adoption of
eMental Health—mental healthcare professionals describe a lack of non-verbal cues, inability to deal
with crisis situations, identity verification and privacy issues, lack of knowledge and experience in
working with eMental Health technologies, an increased demand on therapists due to accessibility of
treatment (which in turn leads to therapists experiencing higher pressure), usability issues and failure
of technology, as well as some more practical concerns such as costs of setting up and maintaining.
The study by Feijt et. al. (2018) also described drivers for the adoption of these technologies, such as
being convinced of their benefit, experiencing said benefit, and mediated contact in between sessions
can create a better therapeutic relationship as well as speed up and enhance the treatment process,
technology and internet-based mediations increase the efficacy of administrative tasks and allow for
new treatment possibilities (VR, biofeedback, etc.). Overall, there is consensus that the most benefit
can be achieved by using Blended Care.

What is Blended Care, its benefits, disadvantages?

The concept of "Blended Care" is a relatively new one that is currently gaining a lot of
popularity in the Netherlands (Ruwaard & Kok, 2015). It refers to a combination of face-to-face
treatments and some kind of digital intervention or component for the best clinical benefit for patients

and therapists, therefore it is also referred to as "technology-supported care" (Wentzel, et. al., 2016). This approach improves treatment adherence rates, saves time through processing psycho-educative content online, and uses traditional therapy sessions to enhance the treatment process or be able to provide care for more patients (Titzler et. al., 2018). Furthermore, since the costs and waiting times for mental healthcare are rapidly increasing (Lusi et al., 2020), Blended Care could be a solution to that problem.

Blended Care through the use of Internet and Mobile based interventions (IMIs) provides extensive coverage due to independence of time and space, has a similar effect as the traditional face-to-face approach, and is even more effective in combination (Titzler et. al., 2018). However, despite all this, there are still low numbers for the integration of this approach into practice (Titzler et. al., 2018). Titzler and colleagues write that there is not yet a clear concept on how to integrate Blended Care into daily practice, however, in their research they do explore the barriers and facilitators perceived by therapists pertaining to the low uptake of the blended approach.

They outline four main factors around which the barriers and drivers seem to be concentrated, namely Implementation into the Healthcare System, Therapeutic Factors, Therapist Factors, and Patient Factors, which pertain to barriers regarding acceptance into practice, barriers to the therapeutic alliance, barriers for the therapists and barriers for the client, respectively. Reports show that therapists perceive technology as unreliable and a lot of time and additional effort must be put into implementing that into the healthcare system. Issues that could strain the therapeutic relationship include technical failure, inability to deal with an acute crisis while using online modules, and the building of an expectation that therapists are always available. Therapists experience drawbacks such having to put more organizational effort, having low technical affinity, an having an overwhelming amount of emails and reminder notifications. Lastly, patient barriers concern a lack of engagement with the online tools or poor completion of the online modules which would derail the treatment process.

On the other hand, common facilitators for the adoption of Blended Care as outlined by the study of Titzler et. al. (2018) include more accessibility and availability for treatment, it is a good prevention approach for subclinical symptoms and preventing symptom deterioration, relapse prevention, the ability for online monitoring and assessment of treatment process, as well as straightening patient self-efficacy and self-management skills. However, even with these benefits to the approach, therapists still report low levels of adoption rates for Blended Care.

Most commonly mentioned barriers to the adoption of this blended approach are the willingness to be trained and gain the necessary technical knowledge and skills, alongside fear that the therapeutic relationship will be negatively affected due to the perceived 'coldness' and lack of compassion in technology (Titzler et al., 2018). Compassion is an essential construct of mental healthcare which has a positive effect on direct treatment and recovery of individual suffering (Sinclair et al., 2016; Fotaki, 2015; Lloyd & Carson, 2011).

What is compassion?

The word compassion stems from the Latin "compati" meaning "to suffer with." Over the years many have tried to define compassion and pondered how to measure it (Lazarus, 1991; Dailai Lama, 1995; Goetz et al., 2010; Kanov et. al., 2004; Gilbert et al., 2010; Neff et al., 2003; Feldman and Kuyken, 2011). Certain constructs have been found to be related to compassion or even necessary for compassion to occur, such as empathy and kindness, and other constructs have been distinguished as different, such as pity or altruism. In recent years Strauss et al. (2016) have attempted to define compassion based on previous definitions by taking into account overlapping similarities. In the end, they proposed that compassion is a cognitive, affective, and behavioral process consisting of five elements—(1) *recognizing suffering*, (2) *understanding the universality of human suffering*, (3) *feeling empathy for the person suffering*, (4) *tolerating uncomfortable feelings that may arise*, and (5) *acting to alleviate the other person's suffering*.

Compassion thus is linked to alleviating suffering, therefore it is unsurprising that it is a core element of mental healthcare. Compassionate care not only increases the quality of care but has also

shown to enhance the therapeutic alliance between patients and therapists (Kemp et al., 2020).

Compassion also supports patient-centered care, which involves viewing the patient as an individual

human being with personal needs, own terms, and social environment, which should be the focus of

the caring process (Epstein & Street, 2011).

In recent years there has been rapid development in new technology options and internet-

based treatments that could potentially be utilized in mental healthcare. Such technology has the

potential to be as effective as traditional therapy, and can additionally increase accessibility for

patients, however the lack of a clear concept of Blended Care and perceived lack of compassion leave

therapists hesitant. For this reason, it would be interesting to use compassion as a frame in shaping the

future of Blended Care.

Therefore, in the current study, we aim to investigate how to bridge the gap in trust and

knowledge in utilizing technology and internet-based interventions and explore what is still needed in

order to perceive technology as less distant and cold, as well as how technology can support

compassion in mental healthcare. This will lead to the better integration of technology and Blended

Care into the mental healthcare field, and help improve and strengthen the relationship between client

and therapist. Ultimately, this will help shape the future of Blended Care and help create a more

sustainable and acceptable mental health care for both therapists and clients.

To do that, the current qualitative study explores the perceptions of current psychology

students (or prospective therapists) that will work in the mental healthcare field after their graduation.

Through the use of in-depth focus group interviews participants' attitudes and perceptions on how to

better and more compassionately integrate technology into mental healthcare practices are explored to

answer the following research questions:

(1) *How does technology influence the perceived roles and tasks of therapists/clients in*

Blended Care? and (2) *How can we integrate technology in a compassionate way in Blended Care?*

Methods

Design

      The goal of this study was to collect data on how prospective therapists feel about technological use and compassion in Blended Care, what the perceived advantages and disadvantages are, and how technology could be integrated into mental health care with compassion as the central goal. To this end, a qualitative study was designed using two focus group interviews as a means to stimulate an open discussion between participants aimed to explore their opinions with the least amount of involvement or steering from the researchers (Bogardus, 1926). The focus group interviews consisted of two main topics that correspond to the two research questions, namely '*Technology in Mental Healthcare*' and '*Technology and Compassion.*'

      The first part focused on the prospective therapist's knowledge of technologies that can be used in mental healthcare and the current state of usage or non-usage of said technologies, e.g. "What kind of technologies do you know of?" and "Imagine yourself in the role of a professional, would you or would you not use technology in your treatments? Why" (see Appendix B). This section relates to the first research question and explores the participants views on what technology can or cannot be used for, what roles it can or cannot take over. The second part focused on the second research question and revolves around the role of compassion in technology use in the mental healthcare field, e.g. "Would technology in any way alter your ability to be empathetic towards the client?" and "Would technology in any way alter your ability/motivation to act in a way to help a client to relieve their suffering?" (see Appendix B). The duration of the focus group interviews was 90 minutes and 40 minutes respectively, and the setting was on the campus of the University of Twente.

Participants

      The two interviews took place in May 2022 approximately one week apart and were conducted with students who are prospective therapists with a mixed background in psychology and different levels of experience with technology. Inclusion criteria are a Bachelor's or Master's degree in psychology, and sufficient proficiency in English to conduct the interview.

Invitations to participate in a 1.5 hour-long focus group interview on the topic of 'Technology in Mental Healthcare' were shared amongst the relative target groups, such as for example on the Canvas page of the Positive Clinical Psychology and Technology (PCPT) master program, on the social media of the researchers, as well as in multiple student-created chat groups for the Bachelor Psychology program where they were reshared by other students amongst each other. The advertisement text informs of the content of the study and some details about it, including how to contact the researchers (see Appendix C). Students who agreed to participate responded to the advertisement by reaching out to the researchers via email or phone and were given further specifications on the location and time of the meeting.

All participants signed an informed consent form (see Appendix A) indicating that they are taking part in the study of their own volition, knowing that it will be audio-recorded and used for the purpose of this study, and knowing they can end their participation at any point with no repercussions. Additionally, participants did not receive compensation for their participation, other than a snack and drink that were offered during the interview itself. Ethical approval was obtained from the BMS Ethics Committee at the University of Twente (reference number 220339).

The final sample consisted of four participants, all female and between the ages of 20 and 32 (mean age=24), consisting of two Master's students (50%) from the 'Positive Clinical Psychology and Technology' program (who also followed a course on the topic Compassionate Technology) and two Bachelor's in Psychology students (50%). Two participants were from Germany, one from the Netherlands, and one from China.

Materials

Materials used during the focus group interview include consent form papers (Appendix A), pens, an audio-recording device, a script, a laptop, and a screen for presenting slides. Additionally, the participants received a demographics form inquiring about their name, age, gender, nationality, and level of education (Bachelor's or Master's). The audio-recording device was procured from the BMS Lab as official equipment to produce high-quality audio recordings. The script consisting of open

questions and different triggers to help further and deepen the conversation can be found in Appendix B. A single laptop was connected to a big screen showing the slides of a presentation including the questions being asked, as well as some examples and pictures to further aid the interview. Coffee and snacks were provided for the participants as gratitude for taking part in the study and were handed out during the break.

Procedure

On the day of the interviews, upon arrival participants were asked to fill out a consent form and answer some demographic questions on paper. Upon finishing that, the audio-recording device was turned on and the presentation was started with a small introduction of the researchers and participants in order to create a more comfortable atmosphere. Participants were further informed that this will be a semi-structured interview, meaning that there is a script of questions that the researchers intend to ask, however depending on the flow of the conversation some out-of-script questions may be asked as well. After that, the outline of the interview and the two focus points were revealed to them along with the indicated 10-minute break between the two main topics. The first interview was 90 minutes long, while the second interview lasted only 40 minutes. At the end of the interview, participants were given space to add anything that they felt was relevant to the topic, after which the interview was officially concluded.

Data Analysis

The transcribed interviews were transferred to Atlas.ti where the coding scheme was created using a method called 'Thematic Analysis' as described by Braun and Clarke (2006). Thematic Analysis is a powerful tool for analyzing qualitative data by identifying themes and meanings within an interview, most often guided by the research questions. Thematic Analysis allows for the division and categorization of information, which in turn makes it easier to digest.

Due to constraints with the Atlas.ti program it was decided to manually calculate the inter-coder agreement (IRA). According to a paper by O'Connor & Joffe (2020) often researchers prefer or are forced to use alternative methods to analyze their data. Therefore, both researchers agreed to first

code 10% of an interview in order to establish a preliminary coding scheme and calculate the inter-rater coding agreement, which was calculated manually as (6/7)x100=85.7% agreement between both researchers, where "6/7" were the codes identified by each researcher.

Westers and Peters (2004) describe a technique called 'focused reading' which pertains to reading the text line by line and coding per relevant segment immediately, which was utilized for the first part of the interviews that focuses on 'Technology in Mental Healthcare'. This is based on a bottom-up approach or a data-driven inductive approach where the coding depends on the information, concepts and background presented in the interview (Braun & Clarke, 2006).

For the second part of the interview which focuses on 'Compassion and Technology' a top-down or theory-driven approach was used (Braun & Clarke, 2006), as the questions were centered around the five elements of compassion as described by Strauss et. al. (2016), namely (1) *recognizing suffering*, (2) *understanding the universality of human suffering*, (3) *feeling empathy for the person suffering*, (4) *tolerating uncomfortable feelings that may arise*, and (5) *acting to alleviate the other person's suffering*. Therefore the answers the participants gave to each question were specifically related to each component of compassion, giving a clear outline of their perceived levels of compassion in the use of technology.

Results

Multiple underlying codes were found and grouped together. Three main topics were outlined: (1) Technology in Mental Healthcare, (2) Compassion in Technology, and (3) Expectations for the Future, with several subcodes each (see Table 1). All of the quotes from the interviews have words such as *like*, *um*, and *uh* removed.

Table 1

List of main codes, subcodes, and the total amount of quotes per code.

Main Code	Subcode	Total amount of quotes
Technology in Mental Healthcare	Existing Technology Examples	n=18
	Experience With Technology	n=8
	Advantages Of Technology	n=19
	Disadvantages Of Technology	n=24
	What Is Technology Lacking	n=6
Compassion in Technology	Recognizing Suffering	n=10
	Understanding The Universality Of Suffering	n=11
	Tolerating Uncomfortable Feelings	n=20
	Showing Empathy	n=12
	Motivation To Act To Alleviate Suffering	n=16
Future Expectations	Expectations and Requirements	n=1
	Willingness To Use Technology	n=12
	Suitability Of Technology (Roles)	n=4
	Solutions	n=9

Technology in Mental Healthcare

Existing Technology Examples

The main focus of this code is the current state of technology in mental healthcare. Participants talked about what kind of technology they knew about and what they had experience with (a total of 18 codes). Examples of technology they knew about include: online platforms and apps such as Minddistrict, therapeutical games [*"So, for example, for anxiety and disruptive classroom behavior and ADHD in children, they tried with games where you, I think it's like a diving thin, and then with your own breathing, you move around as the diver, which is supposed to like help the children concentrate on the breathing and calm it down." - Speaker 2*], mobile sensing, chatbots and robots, smart-watches, EDMR (Eye Movement Desensitization and Reprocessing), and VR [*"For VR you could be using for it to palliate... People who are almost going to pass away, to show them the places they want to go or rebuild the memories that they want to relive, and also for people with aggressive behaviors that they could be exploring around in the VR environment and to explore what would trigger their anger and, you know, to force them to be more aware of them" - Speaker 4*].

Experience with Technology

Furthermore, participants also gave information about their personal experience with using technology in mental healthcare (a total of 8 codes). More specifically, one participant noted her experience with using a website to chat with a therapist for free and gain insights into her brother's behavior, which she further describes as a positive experience [*"So, although it's a free and also brief experience I was very satisfied, it gave me a sort of starting point, a step to hold on and kind of like educated me as well as a first step." - Speaker 4*]. Other participants agreed that they have used technology to self-monitor their behaviors, for example through using a smart-watch, however one noted a negative experience with it and overall stated that it was too time-consuming, while the other had a positive experience. However, due to the participants' lack of experience in the professional field, their personal experience with technology was also limited.

Advantages of Technology

Many advantages and disadvantages of technology were uncovered during the interviews. Starting with the advantages of technology (19 codes), participants noted that technology has the potential to make therapy more accessible [*"... most importantly, it helps us have therapy more accessible and reach more people that otherwise wouldn't be reached with normal face to face therapy." - Speaker 2*] especially regarding Blended Care. In terms of accessibility and efficiency participants also mentioned that there are very few therapists yet many people who need help, which is where technology could help. Some patients may not really need therapy in the traditional sense, but just some guidance and coping skills that they could learn in order to manage themselves better. Having technological aid to help assess the current state of a patient and provide them with the online modules that can give them the skills they need.

Participants also noted that using technology could increase efficiency and save time for the therapist and client. Furthermore, participants give ideas as to how technology could save time by, for example, providing a type of global assessment that can help sort patients out and be more time efficient in helping them. Another idea that participants had that has benefits is keeping an online journal or diary that can be monitored by the therapist, which can also save time and allow therapists to observe behavior. [*"You want to be more time efficient but I think if you maybe look at one patient and then all the technologies you could use and then overall this treatment for the patient might be more here, more time efficient because if you use diaries in between the therapy sessions and in the therapy sessions, you can do more than you would normally do. So the overall treatment is shorter, but from the therapist point, your day just has more tasks because as soon as the client is gone, you have a new one." - Speaker 2*] Finally, participants claimed that technology can help therapists to provide clients with the exact treatment they need through digital screening.

Participants also described a benefit in terms of feeling more comfortable and safe behind a screen instead of in a face-to-face session when putting themselves in the role of both the therapists and client. Another advantage is that technology is a great gateway to therapy to get you started, and it can be useful for behavior modification by, for example, using VR and introducing a phobic client to

a specific environment or object that causes them stress, allowing patients to practice multiple times without the real life consequences such as injuries, making it a very cost-effective method of treatment [*"...Just basically, if a client is afraid of scenario in a situation you could recreate that scenario in that VR and for that person to experience it, and also you could practice so many times. ... So I think that is definitely advantages of the technology on that part, making it easier and also cost-effective and you can practice over and over again until you feel comfortable" - Speaker 4*].

Disadvantages of Technology

On the other hand, 24 codes were made for disadvantages across both interviews. Primarily participants focused on the fact that technology cannot replace therapy [*"But if you use it to replace the intake interview, I think it's not fine. You can use it to help you but not like to replace the therapy." - Speaker 3*]. Further, the perceptions of prospective therapists focus on technical issues and lack of technical support, as well as the lack of knowledge and training in utilizing technology and internet-based interventions. In turn, this is also perceived as something that adds more to the therapists workload instead of lightening it as it was intended. Participants worry that using technology as a medium is another task that therapists need to be preoccupied with, raising concern for big workload and the levels of stress. Overall, participants agree amongst each other that technology itself is still in a developmental phase and there are no standardized foolproof technology based interventions that are actively implemented into practice [*" ... with the errors and you don't know how to fix it or like with the data handling, it's still I feel like in the developmental phase and also like from what I've heard, the things that are already applied to actual therapy and stuff, they, they are not proven to work very well yet or they are not like user friendly or so. I mean I think it can be useful in the end, but now." - Speaker 1*].

Further, participants outline as a disadvantage that privacy remains an issue at hand when using technology, especially regarding prolonged monitoring - would clients be willing to be constantly monitored, further raising questions of whether this data is collected and used by a third party [*"Privacy like [the data] it's getting sold anyways? You know, like where does the wearable come from? Like what brand and so on." - Speaker 2*]. Another issue lays with the accessibility clients have to such technology, as not everyone can afford such equipment, and it's not standard practice for this to be

covered by insurance. On multiple occasions the participant emphasized the importance of receiving training in utilizing technology in your treatment, which is currently lacking in mental healthcare.

Another example of disadvantages pertains to lack of compassion that is often perceived when using technology, in particular one participant mentions that patients that have a need for a stronger bond with the therapist (for example patients with depression) and need more guidance may feel less supported when technology is involved. To further elaborate on this point participants also mention that an important part of successfully integrating technology and internet-based interventions lies in discerning if your client wants or will actually benefit from the use of technology, as it is simply not a good fit for everybody [*"I think that also depends on the clients how he or she perceives the technology. Maybe some people find it obtrusive. I don't know or just don't like the presence of it. I could also think of elderly people for whom those technologies might be completely alien and they just can't use it or can't identify in any part of it." - Speaker 5*].

What is Technology Lacking

Finally, a code about what technology is currently lacking in terms of functions and implementation was made with 6 codes across both interviews. Participants mentioned compassion as an element that isn't very well represented in technology and many participants were of the opinion that technology will never be better than actual human contact, however, agree that technology can be an aid in Blended Care [*"So what should it be lacking? I guess compassion. But I think it depends on what kind of technology we want. So if we really want to replace people in therapy, for example, we are not at a point, at least in my opinion, where technology can show any empathy, affection, compassion to replace a human being. I don't think it ever will." - Speaker 5*]. Other participants focused on the lack of standardization in using technology and the severe lack of training that therapists need in order to comfortably navigate the technology.

Compassion in Technology

Under this general code there are five subcodes based on the definition of compassion as proposed by Strauss et. al. (2016) which states there are five components to compassion. Each component represents a subcode.

Ability to Recognize Suffering

Starting with Ability to Recognize Suffering (10 codes), participants appear unanimous that the use of technology shouldn't change your ability to recognize suffering, however the therapist should be aware that technology, and more specifically online communication, can omit certain cues (such as body language or micro expressions) and signs that help recognize suffering in a normal face-to-face session, which is something the therapist should keep in mind [*"… with moving to online therapy, if you just take, face to face instead of online, in person online, you have to be aware that you're going to lose some cues, but you're going to gain a lot of other ones" - Speaker 2*]. On the other hand, participants propose that the online environment may prompt some clients to feel more safe and more willing to share, but that could also go the other way around - if a client is unwilling to share then even technology wouldn't make it easier to recognize suffering. To this end, participants in this study recommended utilizing technology as a monitoring strategy to gain more insight into the client and use that to recognize suffering, for example by using online journals.

Understanding the Universality of Human Suffering

In the second subcode Understanding the Universality of Human Suffering (11 codes) patients had difficulty understanding the questions and giving straight answers. In the end, participants also agreed that technology shouldn't affect your ability to understand suffering [*"… it shouldn't change the actual things that are involved, like empathy and all the other therapeutic core stuff." - Speaker 2*]. Participants' lack of experience in the field made it more difficult for them to imagine where the difficulties with understanding suffering would lie [*"I think it's difficult to answer from me because I never been in the situation. I can really tell, yeah, if I would be a therapist and use technology, like with or without technology, like the difference between how I understand the person. But if I think if I monitor this person and get more information on their condition and their behavior and their feelings, I think you can get more insight into the person and more details to their condition and also to their personality, but like the real, deep understanding of their unique suffering." - Speaker 4*].

Tolerating Uncomfortable Feelings

For the third subcode, Tolerating Uncomfortable Feelings (20 codes) participants were of the opinion that if you as a practitioner experience uncomfortable feelings then you should cease working with the client. On the other hand, they also mention that the 'online barrier' when using technology can sometimes protect the therapists and give them room and time to adjust their own behavior and reaction [*"Like if I have the online therapy with Zoom or something with camera. So it's like in time, I don't think it changes to face to face. However, if it's written and maybe even asynchronous, I have a lot of time to like, you know, just take a step back, consider what was there like on both hands. Like if my client is feeling really uncomfortable, I can take a moment to really think through what I want to say. And if I'm feeling uncomfortable, I can just disengage for a moment." - Speaker 5*]. So while technology can offer some protection to both the therapist and client allowing them to disengage and better confront and understand their own feelings, participants were adamant that if as a professional therapist you have uncomfortable feelings that you need to combat often, then you shouldn't work with that client. On the other hand, technology and therapy in an online environment are not explicitly the only tool therapists can use to combat their uncomfortable feelings - even in a traditional therapy setting where client and therapists work face to face therapists should be able to also communicate with the client that they need to take a moment.

Showing Empathy

In the fourth subcode, Showing Empathy (12 codes), participants also agree that a therapist's ability to be empathetic should not be changed by technology, but technology has the potential to enable therapists to express empathy and support clients more often and more effectively, for example by utilizing asynchronous communication more often to encourage and support the client [*"I can also think of a positive thing where you can show your empathy through technology. For example, you have a patient with depression and you, for example, want to implement the chatting thing. Then I think it would be nice for the person just, for example, in the morning, just send them a text or say good morning. How are you feeling?" - Speaker 5*]. Furthermore, another participants adds to this that the ability to be empathetic is something therapists already have, and while technology may not change your ability to express empathy, it might change your view on it by gaining more insight into your patients. Lastly, pertaining to showing

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empathy participants agree that clear communication with your client about their expectations of the technology being used is beneficial, as you can talk about what works, what is perceived as empathetic and what is not.

Ability and Motivation to Help Alleviate Suffering

In the final code, Ability and Motivation to Help Alleviate Suffering (16 codes), participants also agree technology shouldn't change the therapists' ability to help as that motivation should be intrinsic to the therapist. Participants were asked if this also applies to asynchronous communication or crisis situations, which is where opinions began to vary. On the one hand, while a patient can reach out to the therapist regarding their crisis at any given time, it is unlikely that the therapist will check their email all the time as they also need time off [*"No. Well, no, because I was going to say it might make it easier for the client to reach out. But theoretically, I have the same working times. I'm not going to check my chat in the evening, same as I'm not going to check my mailbox." - Speaker 2*]. However, on the other hand participants emphasized the importance of self-discipline when it comes to asynchronous communication, that is having the self-discipline to not get into the pitfall of being lazy and leaving work for later. There is a benefit to this too, namely that if you are struggling with making a decision or having a bad day, you could take time before responding to a non-emergency email, hence when allowing yourself some extra time before responding you could argue that you can provide the clients with more quality care. Overall, participants agreed that motivation should not be affected by the use of technology, however their opinions diverged regarding crisis scenarios and how best to prioritize your work.

Future Expectations

Under this code, there are statements that the participants made about their expectations for the future, as well as some solutions on how to more effectively implement technology into practice.

Expectations and Requirements

For the first subcode Expectations/Requirements for the Future (5 codes) participants expressed first and foremost their need for standardized, fully developed and proven to be effective technology, as well as sufficient training being provided to therapists.

Willingness to Use Technology

Regarding their Willingness to Use Technology (13 codes) participants expressed as conditions to use technology in the future that it is proven to be effective and that the client is willing to make use of internet-based interventions [*"You present the most effective treatment to the client, but it's up to the client if the client wants to try or think it's going to work. I think they say that the best technology that would work for a client is if the client believes it's going to work and also if they're willing to try and stick up to it. Yeah, so I really think it depends on the relationship to the client and the efficiency of the technology, and also the client's willingness and their dedication." - Speaker 4*]. One participant was more skeptical about using technology than the rest [*"Because we've been doing traditional therapy. It's been working like there's no need to change it necessarily." - Speaker 2*] and was rather unwilling to implement technology into their practice in the future. Overall, participants deemed the current technology to need further development in order for them to utilize technology.

Suitability of Technology

Participants were also asked about their perceptions on the Suitability of Technology (4 codes) regarding which roles it can or cannot take over. In regards to what technology is suitable for participants indicated that it is a good addition of human work, making administrative tasks more efficient and less time consuming. On the other hand, technology is not suitable for diagnosing patients as its capacity limits itself to simply marking which symptoms are present in a patient and which are not [*"I'm thinking about making a diagnosis. If technology could make such things, you know like really diagnosing people. I think that's a task always a human should make, you know if, if there is a patient and you want to find out, maybe he or she is suffering from a certain disease or anything, and how far could technology or artificial intelligence diagnose certain things, because I think there should always in the last step, be human involved, really like seeing the person. What an AI cannot do." - Speaker 5*].

Solutions

Finally, the last subcode identified is Solutions (9 codes) which encompasses the ideas the participants had about how to make better use of technology in the future. One idea was the implementation of an online journal that would be accessible to the therapist, allowing them to gain insight into the daily activities of the patient [*"Where we already kind of found a solution when we said ... what was it again, it was about the online journaling and then letting the therapist look over the diary entries later. And can come back to you and answer to your state. I think that's a nice way to kind of, yeah, use the technology for patient and therapist to be flexible and to spontaneously make entries and talk about one's feelings. But also for the therapist to have time to respond when they want to." - Speaker 5*]. Furthermore, participants thought that using technology to provide patients with more care by sending encouraging messages is a good way to utilize technology for maximum benefits.

Once again, participants emphasized the importance of standardized technology and procedures to ensure efficacy [*"It should be like a regulation and it should be standard, standardized and people should be getting trained on the standardized technologies and also the lacking of participation from the client side. I think maybe is both the client and therapist job to really work on the alliance and working together towards a goal and having the client really understand. The goal is to help you. And also, like, really make sure that the client knows and have confidence in that technology such as like you can't expect. ... So I think, really, needs to work on the suitability that the gap between the client would try." - Speaker 4*]. In addition, they expressed the need for an expert of the technology being present and making technology at least affordable for the clients.

Discussion

The goal of this study was to explore the attitudes and perceptions of prospective therapists regarding the use of technology and internet-based interventions in mental healthcare practice, framed by the concept of compassion as defined by Strauss et al. (2016), through the use of focus group interviews and an in-depth Thematic Analysis. The analysis yielded three main codes, namely Technology in Mental Healthcare, pertaining to the current state of technology use, Compassion in Technology, following the model of Strauss et al. (2016) pertaining to how participants perceive compassion to be integrated into technology use, and lastly Future Expectations which describes the

changes that participants perceive as necessary for the adoption of technology into mental healthcare practice.

Overall, there was a lot of agreement between participants and across both interviews. Primarily they agreed that technology should not replace traditional therapy, but simply aid it, therefore making Blended Care the perfect solution. Furthermore, participants outlined multiple advantages and disadvantages of technology, while also proposing several solutions for the future. It's difficult to measure the feasibility of these proposed solutions, however the general attitude appeared to be that if the things that technology lacks are improved-such as the lack of standardized procedures, lack of proven effectiveness and lack of training provided for therapists-the willingness to use technology will increase. This was also supported by a study by Mol et al. (2019) on the perceptions of therapists about Blended Care, stating that therapists would have a more positive attitude for this approach if the perceived barriers as described in that study are fixed.

The general attitude of the participants was also relatively neutral when asked if in the future they would use technology. The general consensus was that they would use technology only if it is proven to be effective, standardized, they have been properly trained how to use it, and the clients are also willing to try it. Overall, this research paper falls in line with the previous research done by Titzler et al. (2018) and Feijt et al. (2018) which indicate that the most common barriers to adoption of eMental Health lie in the increased workload and stress, the lack of proven to be effective and standardized technology and internet-based mediations, and the lack of training that therapists need to utilize such innovative treatments. What this study adds to that is perceived solutions and the level of perceived compassion, which was indicated by previous research as lacking when it comes to technology (Lusi et al., 2020). More research points to the detrimental need for compassion in mental healthcare, stating that receiving compassionate care can improve the patients received quality of care, as well as strengthen the quality of the relationship between client and therapist (Kemp et al., 2020), therefore the frame of compassion provided in this research adds to the understanding of how to provide compassionate care while implementing technology and internet-based interventions.

Furthermore, this research focuses on the perspective of students (future professionals), which is something that has not been focused on before. An advantage of using a sample consisting of current students aiming to work in the field is gaining insight into their specific expectations and needs, which can serve as a guideline to begin adjusting how we integrate technology into practice. Moreover, the study itself served as a trigger to raise awareness and cause the participants to already think about the future in advance, helping them to establish a connection between the concepts of technology and compassion.

Therefore, with the information collected from these interviews, the research questions can be answered. (1) *How does technology influence the perceived roles and tasks of therapists/clients in Blended Care?* Participants noted that the roles and tasks will change slightly - albeit technology being an aid to both therapist and client, the therapist will have a lot more to do in a day when having to use technology to monitor multiple patients. This is a concern because therapists may become overwhelmed by the pressure, which falls in line with the barriers depicted in the research of Titzler et al. (2018), Mol et al. (2019) and Feijt et al. (2018). On the other hand, technology will provide a lot of help in terms of accessibility and efficiency, providing clients who are still on a waiting list to speak to a professional with enough online resources to manage their behaviors, while practitioners can reach more clients and have more reliable sources of information about clients' behaviors through self-monitoring devices (Ebert et al., 2018). Overall, the view that the therapist is an 'expert' may diminish and the tasks of the therapist may increase, and only some roles of the therapist (such as administrative tasks) can be overtaken by technology, according to our participants.

For the second research question, (2) *How can we integrate technology in a compassionate way in Blended Care?* participants were very adamant about therapists receiving training so that they feel comfortable with this new technology and can handle it with ease, therefore also maintaining their 'expert' image. Additionally, they heavily emphasized the importance of patients willingness to try using the given technology. If patients are unwilling or unable to use technology, then it should not be forced on them as it will negatively impact the therapeutic alliance. Overall, participants agreed

that the use of technology should not affect the therapists ability to show compassion, but they should simply be mindful that expressing compassion while using technology can have some limitations and therefore they may require more overt actions to convey their compassion. In this sense, if the therapists themselves show compassion in how they utilize technology to help their clients, it really will benefit them.

Limitations and Suggestions

The pitfalls of this research primarily come from a small sample of only four participants who had to answer the interview questions, which can also be a subject to bias (such as social desirability bias) and highly speculatory, purely based on their personal expectations. However, with so much agreement between participants this research serves as a valuable pilot for larger samples (Seal et al., 1998).

Furthermore, a more structured focus group interview with better defined questions can provide more fruitful results, as there were difficulties in translating the five components as defined by Strauss et al. (2016) into questions for the participants, which could have mislead them in understanding what was actually being asked thus lowering the validity of the research. Providing definitions of the five components to ensure participants full understanding of the questions could prove to be beneficial.

Framing the use of technology around compassion is important not only for elaborating on how to use technology compassionately, but can also provide insights on how to design compassionate technology, keeping in mind who will be using that technology and how they can benefit most from it. Future research could expand on this by, for example, allowing therapists to evaluate current technology in terms of compassion and usability, which would enhance the effectiveness of the designs. As stated by the participants of this study, the further development of these technologies is one of the key drivers to their adoption (Ebert et al., 2018).

A benefit of conducting this kind of research with prospective therapists rather than already established professionals in the field is that students are not bound by years of experience, meaning

that they are in a way free from bias against technology. This freedom allows them to imagine the future unburdened by their previous experiences, hence making them more objective. On this note, future research into the use of technology in mental healthcare should focus on how to design new interventions to go hand in hand with the new technology, instead of adapting old interventions to new technology, which is a notion supported by Scholten and Granic (2019). Another interesting point to investigate in the future is the client perspective, as many participants mention that they will only utilize technology if the client wishes to do so - so what makes clients willing to try technology? Blut and Wang (2019) state that individuals differ in their willingness to use technology and that the strength of the motivation to use technology is dependent on its type.

Overall, this research ties into many other disciplines - the use of technology and internet-based interventions can be linked to education, providing innovations that can help students with ADHD or ASD to navigate the classroom better and benefit in their learning experience by utilizing technology compassionately. Furthermore, compassion and compassionate designs should also be a priority for the medical field where they already have much more sophisticated technology that can be presented to the patients with more compassion. Lastly, one of the biggest advantages of using technology is that it can make therapy more accessible, hence meeting the demand requirements from the population. Already allowing for people on waiting lists to receive some form of help even if in the form of a mobile app or online platform is a step forward. Therefore the active study of compassionate technology in mental healthcare is crucial for the evolution of the mental healthcare field and the growth and wider acceptance of Blended Care.

Conclusion

To conclude, the adoption rates of eMental Healthcare and internet-based interventions are low due to the lack of standardization of technology, the lack of training and the possible difficulties of working with technology, as well as the increased pressure that therapists feel as the demand for help and the accessibility to help continues to grow. Possible solutions to these challenges are the further development of more sophisticate technology and the provision of training and manuals to ass

therapists, as well as emphasis on integrating technology compassionately. Research into this topic could provide with a formula for compassionate technology design and help to create a standardized method of utilization, or a clear concept of Blended Care, ensuring the safety and efficiency of use, which would make mental healthcare accessible to more individuals in need.

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Appendix

Appendix A. Informed Consent and Demographics Form

Dear participant,

Before the start of our meeting please fill out the following form:

Name: _____

- I consent to be part of this study and participate in a focus group meeting.

- I am aware that this session will be audio-recorded and I consent to that.

- I am aware that all names and personal information given during this session will be anonymized for the purpose of this research.

- I am aware that the data gathered will be stored safely for a year after the completion of the research.

- I am aware that I can withdraw my participation from this study at any time with no consequences.

What is your age: _____

What is your gender:

- Male

- Female

- Non-binary

- Do not wish to disclose

What is your nationality: _____

Are you a Bachelor's or Master's student?

- Bachelor

- Master

Appendix B. Interview Script

Introduction (15min)

hand out pen and papers to fill out demographics: name, age, nationality, gender, occupation, etc., ask them to fill it out before the end of the meeting

Thank you all for coming today! Let us introduce ourselves one more time, we are Max and Simona, currently 3rd-year psychology students working on our bachelor thesis about using compassionate technology in mental healthcare. To learn more about that we reached out to you hoping to learn from you and inquire about your opinions on the topic. Now, you know our names, however, we don't know you that well yet, therefore, if you don't mind can we do a quick round of introductions before we move on to elaborating more on how we hope today's focus group goes? **insert introductions**

So, now that introductions have been concluded, we can move on to discussing the outline for today. This meeting will last about an hour and a half during which we will also have a small break and have some snacks and recharge before we dive back into the topic. We would also like to audio-record our session so we can transcribe the information and use it for our thesis. It's important that you know that your names and personal information will be anonymized and the audio recording will be stored safely for a year after the completion of our project, and of course, you can end your participation in today's focus group at any point, for any reason, with no consequences. **ask verbal consent to record, note that they do understand they can stop at any time**

Okay, so we've decided to have two focal points for today's discussion, namely using technology in mental healthcare, and the perceived levels of compassion when using technology in mental healthcare. We will be asking you a lot of open questions, as well as showing you some images, please share your thoughts and opinions or any personal experience on the matter if you have any. Feel free to ask questions if anything doesn't make sense to you as well! We just want to have a nice open discussion on the topic of technology in mental healthcare, so there are no right or wrong answers! So, any questions so far? If not, let's jump right in.

Part 1: Technology in Mental Healthcare (Perceived limitations/advantages of using technology)

a. What technologies do you know of that can be used in mental healthcare? **10min**

    i. examples: biofeedback, online meetings, email, take-home online assignments, online diaries, other online tools, anything non-f2f) (*follow up*)

    ii. Imagine yourself in the role of a professional, would you or would you not use technology in your treatments? Why?

    iii. *If you have ever been in therapy were there instances where technology was utilized? What was your experience? OPTIONAL*

b. What are in your opinion some advantages and/or disadvantages of technology incorporation in current practice within mental health care? **10min**

c. *Do you believe there is more merit or harm in using technology in mental healthcare? OPTIONAL 5min max.*

d. *What tasks and roles can or cannot technology take over? OPTIONAL 5min max.*

Part 2: Compassion in Technology (How can we use technology more compassionately?)

e. Based on your current knowledge, do you believe technology in mental healthcare lacks anything? *(probe on compassion, start a conversation about how to improve the integration of technology in mental healthcare)* **5min max.**

    i. Imagine you are a professional again: what changes would you observe in your work environment and client relationship if you implemented technology into your treatment process?

    ii. Would the use of technology alter in any way how you recognize **suffering** in a client? e.g. in an online environment? **7min max.**

        1. What is the difference between traditional face-to-face sessions and online sessions/sessions utilizing technology? *(probe on micro-expressions, body language, challenges of using technology, client relationship)*

2. *Do you have ideas on how we can use technology better/more compassionately to enable a better understanding of the client's suffering? OPTIONAL*

iii. Would technology alter in any way your **understanding** of the client? **7min max.**

    1. What are the challenges/advantages that you may experience when utilizing technology in treatment with regards to understanding that the client's suffering? / understanding that all humans can and will at some point experience suffering? / remaining partial to their suffering while accepting and understanding it? / putting yourself in their shoes and understanding their suffering?

    2. *Do you have ideas on how we can use technology better/more compassionately to understand the clients better? OPTIONAL*

iv. Would technology in any way alter your ability to be **empathetic** towards the client? **7min max.**

    1. *How do online sessions compare to face-to-face sessions? OPTIONAL*

    2. *Do you have ideas on how we can use technology to help create a stronger connection or better bond with a patient? OPTIONAL*

v. Would technology in any way alter your abilities to **tolerate uncomfortable feelings** while working with a client? **7min max.**

    1. Can technology protect the therapist or client in any way? [e.g. necessary barrier between client and therapist]

    2. *Do you have ideas on how technology can be used better to help the therapist deal with uncomfortable feelings more effectively/easily? OPTIONAL*

    vi.   Would technology in any way alter your **ability/motivation to act** in a way to help a client to relieve their suffering? **7min max.**

        1.   How can technology hinder you, or how could it benefit you when dealing with a crisis?

        2.   *Do you have ideas on how technology could assist you better in acting towards alleviating the suffering experienced by clients?* ***OPTIONAL***

f.   *How can we make up for the aspects that technology is lacking?* ***OPTIONAL 5min max.***

g.   After all the discussions we've had so far, do you hold your initial opinion on whether you would implement technology into your practice or not, or have you changed your mind? Would you make use of technology in treatment in the future? Why/Why not? **5min max.**

h.   *For those who still hold the opinion against the use of technology:* Is there a way to change/utilize technology better what would make you reconsider using it in the future? **5min max**.

Ending (10min max.)

Well, it seems we're approaching the end of our discussion today! You've answered all the questions we had prepared and have created a great discussion that we can use for our thesis, which we are thankful for! There are a few minutes left, of course, if you have anything more to add on the topic that was not covered by our questions, please go ahead! ****space for any additional input****

Well, I guess this marks the end of this focus group, we greatly appreciate your time and effort and we hope you enjoyed this session! If you have any follow up questions regarding our research or anything else related to this meeting, please feel free to contact us via email! Once again, thank you so much for today and we hope you have a great afternoon!

Appendix C. Research Advertisement Text/Email

Dear all,

Are you interested in e-mental health? Are you interested in what part technology plays in mental healthcare? Do you like to talk about compassion and how it can be integrated with technology? Are you currently active in mental health related work (e.g. in an internship) or hoping to work in the mental healthcare field in the future? And would you like to share your thoughts in a group discussion? If your answer is yes to all, we need you!

We are two students (Max and Simona) currently doing our bachelor thesis on the topic of e-mental health, technology, and compassion. The aim of our research is to examine the attitudes of prospective therapists regarding the integration of technology in mental healthcare, and how that can be achieved more compassionately, therefore we are opting to create a focus group where we can discuss just that. The focus group meeting itself will take roughly 1.5 hours and will be on the campus of the University of Twente. This includes a 10-15 minute break in between where we will provide you with a drink and a snack. We hope to have a fun and stimulating open discussion where participants can share their thoughts and ideas on the topic, therefore if you are interested in participating please respond as soon as possible!

The preliminary date is _____ from _____ on campus. If you wish to participate you can reach us via this email address: s.r.velikova@student.utwente.nl or on this phone number and further details for the focus group will be enclosed! We look forward to speaking with you! 😊

Kind regards,

Max Meijerink and Simona Velikova